

Claims

1. An inflatable device, comprising:
a substantially fluid impermeable bladder; and
5 a fluid controller comprising an electrically powered pump and at least partly positioned within the bladder.
2. The inflatable device of claim 1, wherein the fluid controller is constructed and arranged such that a majority of the fluid controller is positioned within the bladder.
- 10 3. The inflatable device of claim 2, wherein the fluid controller is constructed and arranged such that substantially all of the fluid controller is positioned within the bladder.
4. The inflatable device of claim 1, wherein the bladder comprises a recess sized to
15 accommodate at least a portion of the fluid controller.
5. The inflatable device of claim 1, wherein the fluid controller comprises a housing.
6. The inflatable device of claim 5, wherein the housing comprises a flange that
20 connects to the bladder.
7. The inflatable device of claim 1, wherein the fluid controller comprises a flange that connects to the bladder.
- 25 8. The inflatable device of claim 7, wherein the flange comprises a fluid impermeable wall that connects to a housing of the inflatable device.
9. The inflatable device of claim 8, wherein the flange connects to the housing at an outlet of the housing.
- 30 10. The inflatable device of claim 7, wherein a remainder of the fluid controller is constructed and arranged to be removable from the flange.

11. The inflatable device of claim 1, wherein the fluid controller comprises a first locking mechanism and an adjustment device including a second locking mechanism sized and adapted to reversibly mate with the first locking mechanism.

12. The inflatable device of claim 11, wherein the adjustment device further comprises:
a first switch electrically connected to the pump and a power source such that the first switch may selectively energize the pump; and
a second switch mechanically connected to a valve of the fluid controller such that it may selectively open the valve;
wherein the first switch and second switch are in fixed proximity to one another.

13. The inflatable device of claim 12, wherein the adjustment device further comprises a top portion and the first switch and the second switch are positioned on the top portion.

14. The inflatable device of claim 1, further comprising an adjustment device, including:
a first switch electrically connected to the pump and a power source such that the first switch may selectively energize the pump; and
a second switch electrically connected to a power source and electro-mechanically connected to a valve of the fluid controller such that it may selectively open the valve.

15. The inflatable device of claim 14, wherein the electro-mechanical connection comprises a solenoid.

16. The inflatable device of claim 1, wherein the fluid controller comprises a valve and a member connected to the valve that moves the valve between an open and a closed position.

17. The inflatable device of claim 16, wherein the member is adapted to be actuated by a switch on an adjustment device.

18. The inflatable device of claim 16, wherein the member is a stem.

19. A combination of a fluid controller comprising an electrically powered pump and an inflatable device, comprising:
the fluid controller connected to the inflatable device such that the exterior profile of

the fluid controller and inflatable device in combination is essentially the same as the exterior profile of the inflatable device.

20. An inflatable system, comprising:

a substantially fluid impermeable bladder; and

a fluid controller comprising:

a pump in fluid communication with the bladder and comprising a first locking mechanism; and

an adjustment device including a second locking mechanism sized and adapted to reversibly mate with the first locking mechanism.

21. The inflatable system of claim 20, wherein the adjustment device further comprises:

a top portion;

a first switch having a first position and a second position, positioned on the top portion and electrically connected to the pump and a power source; and

a second switch positioned on the top portion and mechanically connected to a valve.

22. The inflatable system of claim 20, wherein the pump is an electrically powered pump and the fluid controller is at least partly positioned within the bladder.

23. The inflatable system of claim 22, wherein a majority of the fluid controller is positioned within the bladder.

24. The inflatable system of claim 23, wherein substantially all of the fluid controller is positioned within the bladder.

25. The inflatable system of claim 22 wherein the bladder includes a recess sized and configured to accommodate at least a portion of the pump.

26. The inflatable system of claim 22, wherein the pump includes a housing and the housing includes a flange that connects to the bladder.

27. An inflatable device, comprising:

a substantially fluid impermeable bladder; and

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a self-sealing valve, and

an adjustment device, comprising:

a first switch electrically connected to the pump and a power source such that the first switch may selectively energize the pump, and

a second switch electrically connected to a power source and electromechanically connected to a valve of the fluid controller such that it may selectively open the valve.

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28. The inflatable device of claim 17, wherein the electro-mechanical connection comprises a solenoid.